

Work Order ID 83636

83636

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April-20-12 2:31:05 PM

Item ID: D3391-021 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Fwd Tube Assembly
 Start Date: 20/04/2012 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 04/05/2012 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: ML5 Date: 12/04/23 Tooling: Date: Run Start ***NR1***
 QC: Date: SPC (Y/N): Date: Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D3391	I

100		0.00							
100	Skidtubes								
Skidtubes	Memo	0.00							
Skidtubes	Cut extrusion to 46.52 +0.010 -0.020								

De 12/05/22

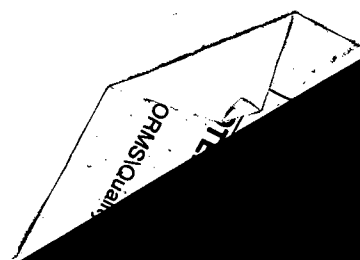
110		0.00							
110	BENDING MACHINE - SKIDTUBES								
CNC Bend 1	Memo	0.00							
CNC Delta 100 Bender	Bend as per Dwg D3391 Using Bend Prog 3391021								

De 12/05/31

120		0.00							
120	QC5- Inspect part completeness to step on W/O								
QC	Memo	0.00							
Quality Control									

6.8125"

12-6-1



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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5: Date & initial all entries

Work Order ID 83636

8.36.36

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Cust Item ID:

Required Date: 04/05/2012 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130		0.00							
130	HAAS CNC VERTICAL MACHINING #1								
HAAS 1	Memo	0.00							
HAAS CNC vertical machine #1	1-Machine as per Folio FA590 Rev. <u>NA</u> & Dwg D3391 Rev. <u>1</u> Identify as D3391-1 2-Deburr								
140		0.00							
140	QC2- Inspect parts off machine FAI/FAIB								
QC	Memo	0.00							
Quality Control									
150		0.00							
150	CONVENTIONAL MILLING MACHINE								
Mill Conv	Memo	0.00							
Conventional Milling Machine	Drill X1 Aft cap as per Dwg D3391 .1875" dia								

W/O:		WORK ORDER CHANGES					
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*** 1 ***

Cust Item ID:

Required Date: 04/05/2012 **Req'd Qty:** 1.00

*** 1 ***

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Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/
Work Center ID

Operation Description

Set Up/ Run Hours

Tool ID**Tool #**

Plan Code

Accept Qty

Reject
Qty

Reject Number

**Insp.
Stamp**

160

QC2- Inspect parts off machine FAI/FAIB

0.00

160

0.00

encl 12/06/05

QC

Memo

Quality Control

170

QC8- Inspect parts - second check

0.00

170

0.00

125615

QC

Memo

Quality Control

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180

0.00

180

Skidtubes

Skidtubes

Memo

0.00

Skidtubes

1-Drill Remaining two holes for tow cap using DT 8819 Locating off of .1875" holes drilled in previous step

2-Drill float bag holes as per Dwg D3391 using DT8798(Do not open tow cap holes to finish size)
(ONLY DRILL HOLES MARKED "A")

3-Open tow cap holes to .208" as per Dwg D3391

4-Open Tow Ring hole to .640" as per Dwg D3391

5- open float bag holes 0.328" and counter sink as per dwg D3391

6-Deburr & Scribe Batch number Inside aft end.

7-Transfer drill D3391-021 with D3391-023

NO WEARPLATE HOLES ARE TRANSFER DRILLED

DC 12/06/12

DC 12/08/02

CF 12-8-2

190

QC5- Inspect part completeness to step on W/O

0.00

190

QC

Memo

0.00

Quality Control

DAS 16 9-83 17/02/03

W/O:		WORK ORDER CHANGES					
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Stop *NR2*

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200

Chemical Conversion Coat per QSI005 4.1

0.00

200

Memo

0.00

HandFinish

Hand Finishing

210

QC7-Inspect Chemical Conversion Coat

0.00

210

Memo

0.00

QC
Quality Control

220

Skidtubes

0.00

220

Memo

0.00

Skidtubes

Skidtubes

1-instal spacers as per dwg D3391
A/R Magnabond 6398 batch: 17 120666
exp. date: 13-1-3a
cure time 12hrs. as per QSI015
2- grind crossbolt flush
3-back drill crossbolt if necessary

-DC 12/08/08

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230

QC5- Inspect part completeness to step on W/O

0.00

230

QC

Memo

0.00

Quality Control

235

Pressure Wash per QSI005 4.3

0.00

235

HandFinish

Memo

0.00

Hand Finishing

AND REALODINE AS PER PAR09-043

240

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00

240

Powdercoat

Memo

0.00

Powder Coating

START TIME: 3:30
OVEN TEMPERATURE: 320 F
FINISH TIME: 4:00

W122878

1 12/09/20

1x 12/09/20

1x 12/09/20

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Accept

Setup Start *NS1*

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Start Date: 20/04/2012 **Start Qty:** 1.00 ***1***

Cust Item ID:

Required Date: 04/05/2012 **Req'd Qty:** 1.00 *** 1 ***

Customer:

Reference:

Run Start *NR1*

Approvals: _____ **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Stop *NR2*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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250 QC3- Inspect Part Finish

0.00

250

QC Memo

0.00

Quality Control

255	0.00
-----	------

255

Skidtubes Memo

Skidtubes **** install D3591-1 spacer as per DSI9364 and wearplate as per DWG ****

257	QC5- Inspect part completeness to step on W/O	0.00
-----	---	------

257

QC Memo

Quality Control

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
260	Identify as per dwg & Stock Location: <u>w/o</u>	0.00		0412-742-043 / B87065					
260									
Packaging	Memo	0.00				1x			
Packaging									
280	QC21- Final Inspection - Work Order Release	0.00							
280									
QC	Memo	0.00							
Quality Control									

12/10/5 *[Signature]*
 MF
 12-104

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Picklist Print

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Work Order ID: 83636

83636

Parent Item: D3391-021

D3391-021

Parent Item Name: Fwd Tube Assembly

Start Date: 20/04/2012

Required Date: 04/05/2012

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP A05.09.13New issue KJ/JLM
 IPP B06.02.10Dwg rev.D ecn 773 EC
 IPP C06.05.02Added inspections EC
 IPP D 07.03.13 rev F dwg EC
 IPP E 07.11.07 revG dwg ecn1053P EC verified by: DD
 IPP Rev:f ECN 1056 07-11-12 DD verified by: EC
 IPP Rev:G 08-09-08 new process (ecn 08-510) DD verified by:EC
 IPP Rev:H 08-09-10 revH as per dwg DD verified by:EC
 IPP Rev I 09.02.02 added hardware EC verified by: DD IPP Rev:J
 11.11.14 AS PER REV.I DD verified by:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
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D4095-051		Manufactured	No			255	Each	29.0000	1	1														
<p>*D4095-051*</p> <p>Wearpad Assembly</p>																								
<table border="0"> <tr> <td><u>Location</u></td> <td><u>Loc Qty</u></td> <td><u>Loc Code</u></td> </tr> <tr> <td>FP002</td> <td>29</td> <td></td> </tr> <tr> <td>78914</td> <td>7</td> <td></td> </tr> <tr> <td>81613</td> <td>22</td> <td></td> </tr> </table>													<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>	FP002	29		78914	7		81613	22	
<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>																						
FP002	29																							
78914	7																							
81613	22																							

D6013-047		Manufactured	No			100	Each	102.0000	1	1											
<p>*D6013-047*</p> <p>Skidtube Material</p>																					
<table border="0"> <tr> <td><u>Location</u></td> <td><u>Loc Qty</u></td> <td><u>Loc Code</u></td> </tr> <tr> <td>LG</td> <td>102</td> <td></td> </tr> <tr> <td>72505</td> <td>102</td> <td></td> </tr> </table>													<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>	LG	102		72505	102	
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LG	102																				
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Work Order ID: 83636

83636

Parent Item: D3391-021

D3391-021

Parent Item Name: Fwd Tube Assembly

Start Date: 20/04/2012

Required Date: 04/05/2012

Start Qty: 1.00

Required Qty: 1.00

D3670-4-200

Manufactured No

220

Each

55.0000

4

4

D3670-4-200

SPACER

**

PC 12/08/08

Location

B85460

Loc Qty

Loc Code

LG

40

80360

40

LG001

15

72851

3

78606

12

(4)

D3401-041

Manufactured No

255

Each

17.0000

1

1

D3401-041

Tow Cap Assembly

**

92 12/10/04

Location

Loc Qty

Loc Code

FP002

17

78990

2

82302

15

B83432

X1

AN960C10L

NAS1149C0332

Purchased

No

255

Each

0.0000

10

10

*AN960C10I * ✕

washer

AN3C4A

Purchased

No

255

Each

2,292.000

10

10

AN3C4A

BOLT

**

92 12/10/04

Location

Loc Qty

Loc Code

ST350

2292

120187

1226

120521

28

120769

38

121205

1000

M123021

v10

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Shop Packet Print

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D3391-021

Parent Item Name: Fwd Tube Assembly

Start Date: 20/04/2012

Required Date: 04/05/2012

Start Qty: 1.00

Required Qty: 1.00

D3672-1

Manufactured No

255

Each

960.0000

4

4

D3672-1

Phenolic Washer

**

yl n/10/04

Location

Loc Qty

Loc Code

FP001

10

66821

10

ST060

950

72229

4

76277

446

80369

500

1385222

x4

AELS-1032-225

Purchased

No

255

Each

0.0000

10

10

AFI S-1032-225

INSERT

* AHS7-1032-225 / M122290

**

(10) yl n/10/04

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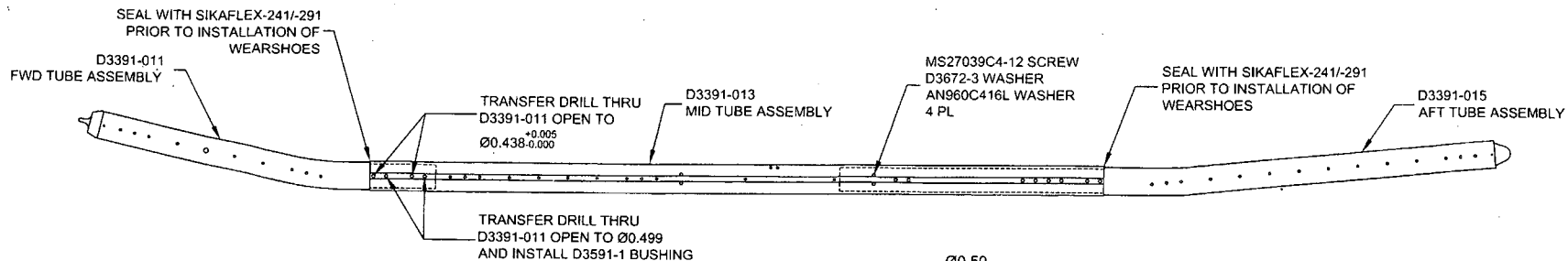
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D3391-041 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

QTY	PART NUMBER	DESCRIPTION
X	D3391-041	FLOAT SKIDTUBE ASSEMBLY
1	D3391-011	FWD TUBE ASSEMBLY
1	D3391-013	MID TUBE ASSEMBLY
1	D3391-015	AFT TUBE ASSEMBLY
2	D3591-1	BUSHING
4	D3672-3	WASHER
1	D4095-041	WEARSHOE
1	D4095-043	WEARSHOE
1	D4095-045	WEARSHOE
1	D4095-047	WEARPAD
1	D4095-049	WEARPAD
1	D4095-051	WEARSHOE
24	AN3C4A	BOLT
10	AN3C6A	BOLT
4	AN3C7A	BOLT
38	AN960C10L	WASHER
4	MS27039C4-12	SCREW
4	AN960C416L	WASHER

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. *83636 MLC*
R/04/23

D3391-041 ASSEMBLY

GENERAL NOTES

- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON"
AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES
FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT
WHERE INDICATED.
- 6) FIT D4095-041 TO SKIDTUBE WITH D2571 AND D2572 SADDLES INSTALLED WITH
APPROPRIATE HARDWARE AND SPACERS IN FORWARD AND AFT HOLES AND
TRANSFER DRILL Ø0.50 HOLES FROM SADDLE TO D4095-041
- 7) FIT D4095-043 TO SKIDTUBE WITH D2571 AND D2572 SADDLES INSTALLED WITH
THE APPROPRIATE HARDWARE AND SPACERS IN FORWARD AND AFT HOLES AND
TRANSFER DRILL Ø0.50 HOLES FROM SADDLE TO D4095-043

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2011-11-04
ECN# 11-662

I	REMOVE GASKETS AND REPLACE ALL WEARSHOES; PARTS LIST UPDATE. ZN A8-1, ZN A8-2, ZN A8-4, ZN B6-8; LPS-3 COATING REMOVED FROM NOTE 2, ZN A3-1, ZN A3-2, REMOVED INSERT AELS-1032-130, ZN B6-4, B2-4, C7-8, C3-8; REMOVED HOLES, ZN D6-4 ZN D2-4, ZN D7-8, ZN D3-8	XDF	11.10.13
H	DRAWING UPDATED TO CURRENT STANDARDS. SHT 1 PL ADDED D3591-1 BUSHING. ZN C6 Ø0.438 DIM WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING. SHT 2 PL ADDED D3591-1 BUSHING. ZN C6 Ø0.438 DIM WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING. (FOR FURTHER INFO SEE DSI 9364 & NCR 08-074)	AJS	08.08.20
G	REPLACE NAS INSERTS W/ AELS INSERTS SWITCH TO D3670-XXXX SPACERS FOR INSTALLING FLOAT BAGS, DWG REORGANIZED FOR CLARITY	DC	07.07.31
F	ADD SS WEARSHOE, GASKET REMOVE FWD SADDLE HOLE -011/-021	PH	07.01.18
E	CHANGE TOLERANCE, EASE MANUFACTURE	PH	06.04.25
D	UPDATE TOLERANCE, CHANGE HOLE SIZE	PH	06.01.23
C	LENGTHEN AFT EXTENSION	PH	05.09.27
B	DRAWING UPDATES	PH	05.06.10
A	NEW ISSUE	PH	05.02.07
REV.	DESCRIPTION	BY	DATE
DESIGN	PH		
DRAWN	XDF		
CHECKED			
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DE APPR.			
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DART AEROSPACE USA, INC
KENT, WA

DRAWING NO. **D3391** REV. **1**
SHEET **1** OF **8**
TITLE **412 FLOAT SKIDTUBE** SCALE **NTS**

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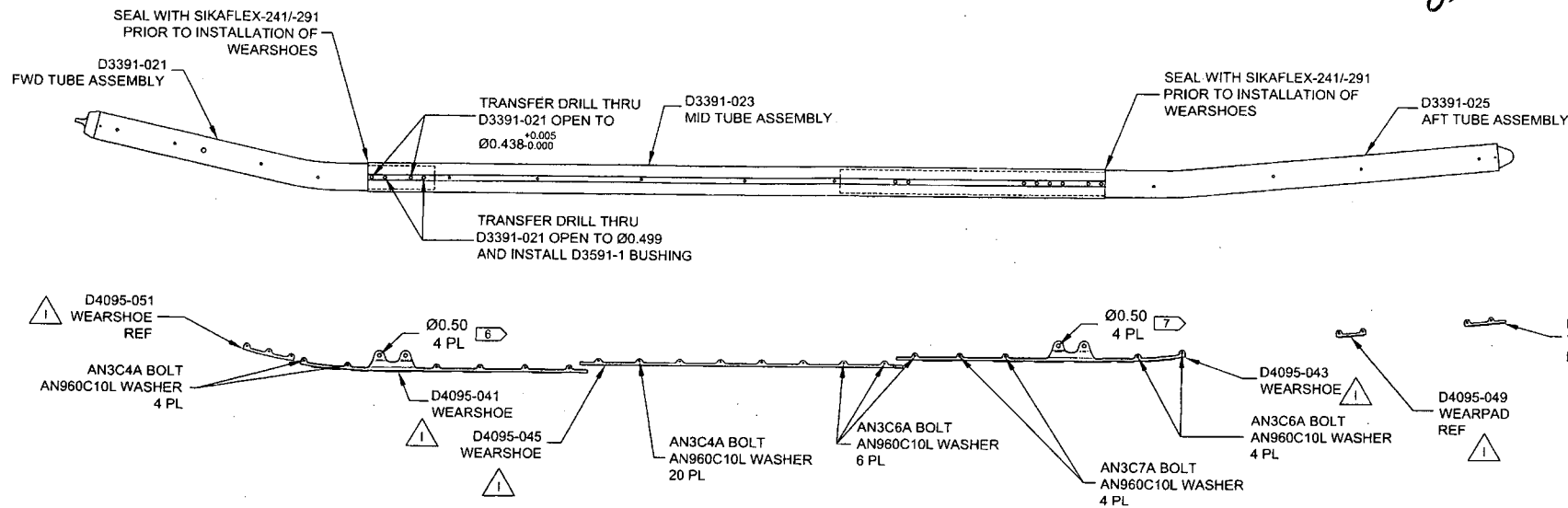
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NOTE: Date & initial all entries

83636



D3391-043 ASSEMBLY

D3391-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

QTY	PART NUMBER	DESCRIPTION
X	D3391-043	FLOAT SKIDTUBE ASSEMBLY
1	D3391-021	FWD TUBE ASSEMBLY
1	D3391-023	MID TUBE ASSEMBLY
1	D3391-025	AFT TUBE ASSEMBLY
2	D3591-1	BUSHING
1	D4095-041	WEARSHOE
1	D4095-043	WEARSHOE
1	D4095-045	WEARSHOE
1	D4095-047	WEARPAD
1	D4095-049	WEARPAD
1	D4095-051	WEARSHOE
24	AN3C4A	BOLT
10	AN3C6A	BOLT
4	AN3C7A	BOLT
38	AN960C10L	WASHER

GENERAL NOTES

- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON"
- 3) AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
- 4) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) UNITS: INCHES UNLESS OTHERWISE NOTED
- 6) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.
- 7) FIT D4095-041 TO SKIDTUBE WITH D2571 AND D2572 SADDLES INSTALLED WITH APPROPRIATE HARDWARE AND SPACERS IN FORWARD AND AFT HOLES AND TRANSFER DRILL Ø0.50 HOLES FROM SADDLE TO D4095-041
- 8) FIT D4095-043 TO SKIDTUBE WITH D2571 AND D2572 SADDLES INSTALLED WITH THE APPROPRIATE HARDWARE AND SPACERS IN FORWARD AND AFT HOLES AND TRANSFER DRILL Ø0.50 HOLES FROM SADDLE TO D4095-043

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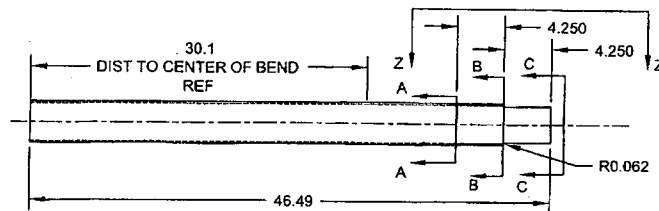
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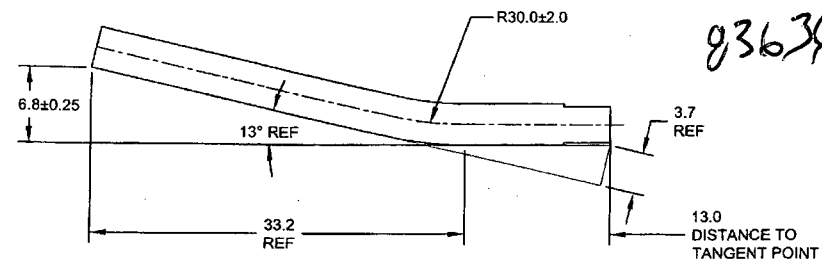
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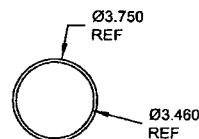
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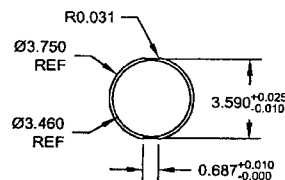
D3391-1 CUTTING DETAIL
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



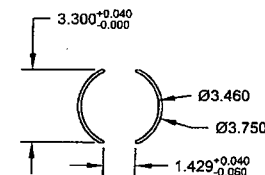
D3391-011/-021 BENDING DETAIL
(MAKE FROM D3391-1)



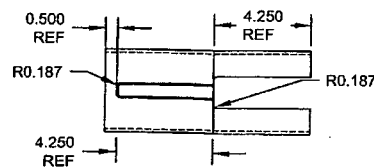
SECTION A-A
SCALE 2X



SECTION B-B
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SECTION C-C
SCALE 2X



VIEW Z-Z
SCALE 2X

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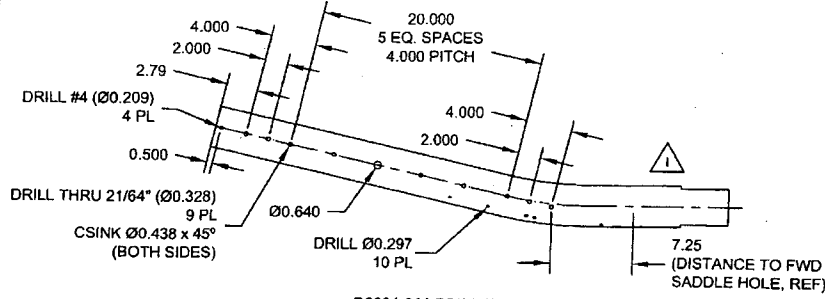
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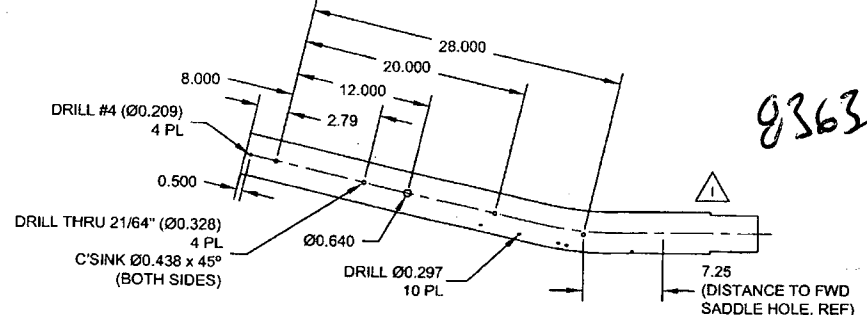
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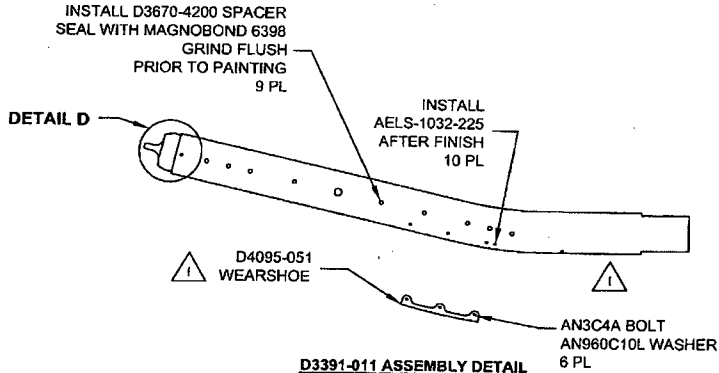
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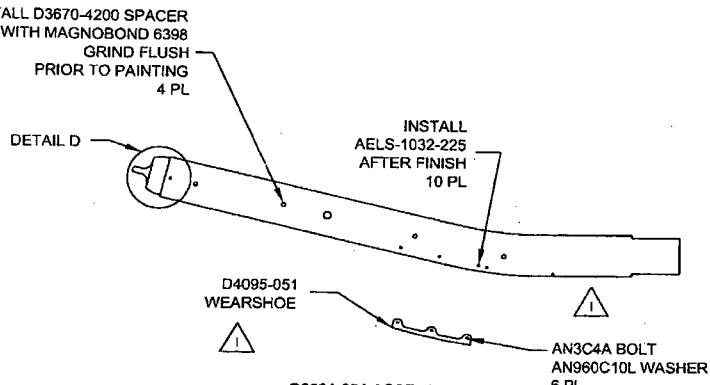
D3391-011 DRILLING DETAIL



D3391-021 DRILLING DETAIL



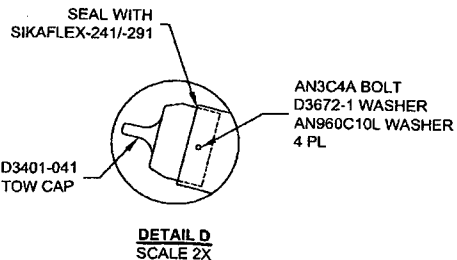
D3391-011 ASSEMBLY DETAIL



D3391-021 ASSEMBLY DETAIL

D3391-011/-021 FWD TUBE ASSEMBLY PARTS LIST

QTY - 011	QTY - 021	PART NUMBER	DESCRIPTION
X	X	D3391-011	FWD TUBE ASSEMBLY
		D3391-021	FWD TUBE ASSEMBLY
1	1	D3401-041	TOW CAP
9	4	D3670-4200	SPACER
4	4	D3672-1	WASHER
1	1	D4095-051	WEARSHOE
1	1	D6013-047	FWD TUBE
10	10	AN3C4A	BOLT
10	10	AN960C10L	WASHER
10	10	AELS-1032-225	INSERT



DETAIL D SCALE 2X

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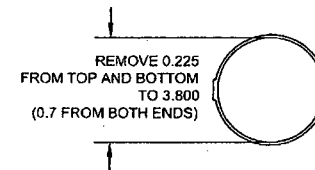
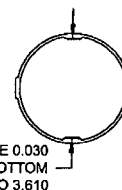
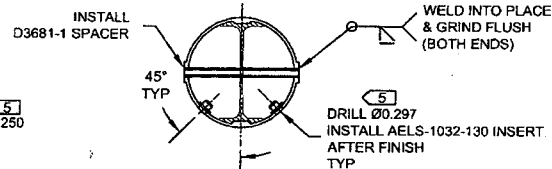
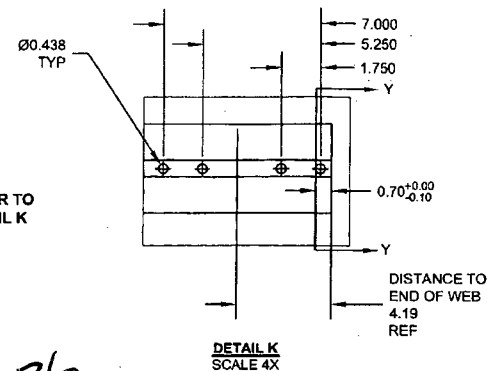
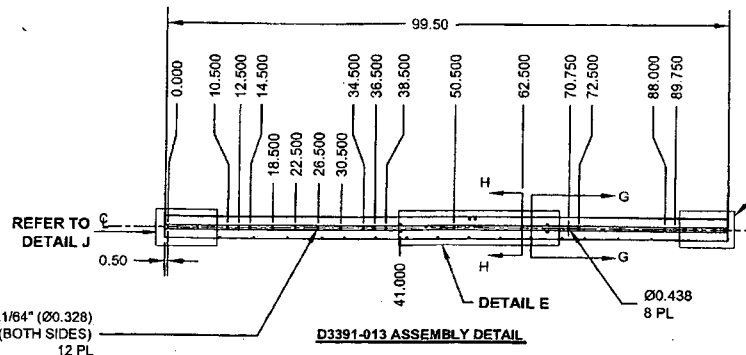
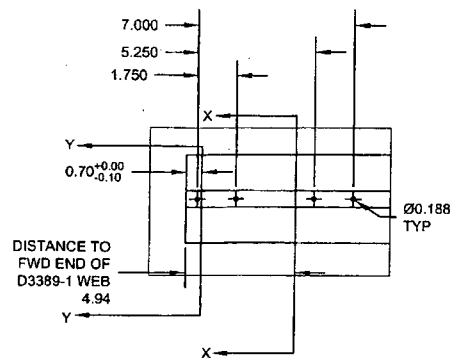
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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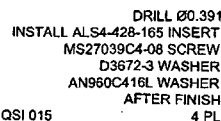
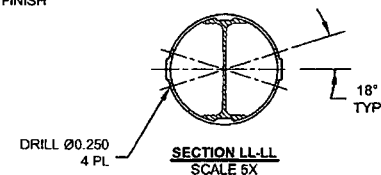
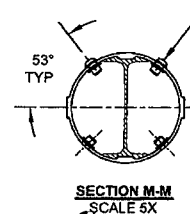
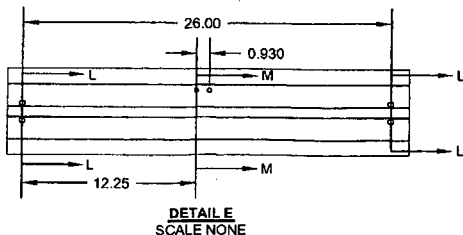
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D3391-013 MID TUBE ASSEMBLY PARTS LIST

QTY -013	PART NUMBER	DESCRIPTION
X	D3391-013	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
4	D3672-1	WASHER
4	D3672-3	WASHER
12	D3681-1	SPACER
24	AELS-1032-130	INSERT
4	ALS4-428-165	INSERT
4	AN960C10L	WASHER
4	AN960C416L	WASHER
4	MS27039C1-09	SCREW
4	MS27039C4-08	SCREW



D3391-013 MID TUBE ASSEMBLY

- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/-291 PER QSI 015
- 3) WELDING: PER DART QSI 004

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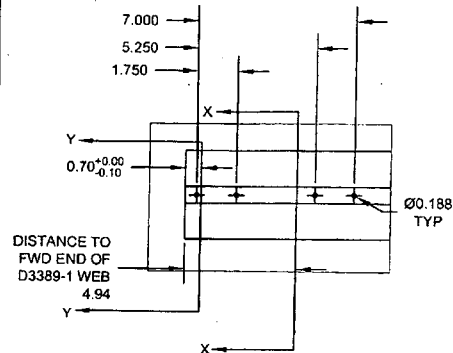
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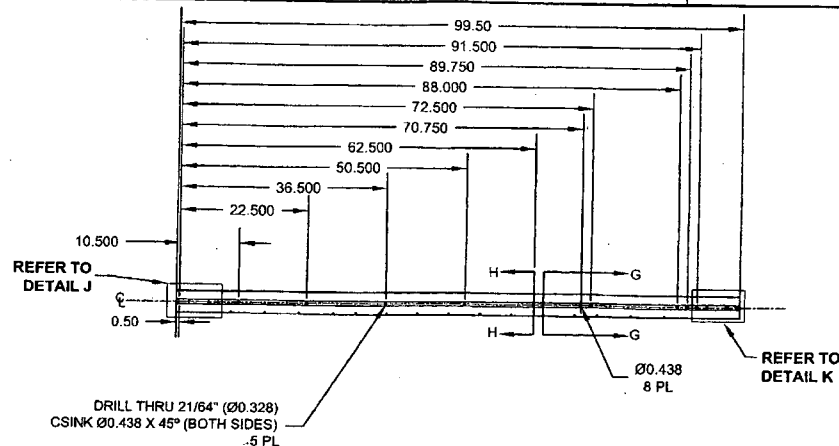
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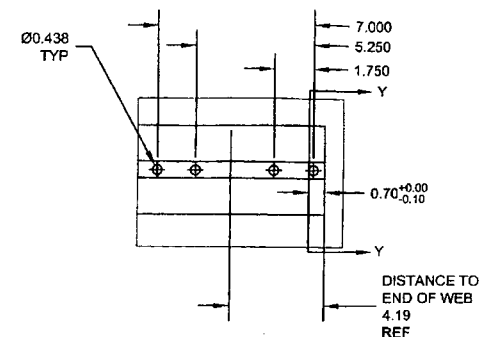
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DETAIL J
SCALE 4X



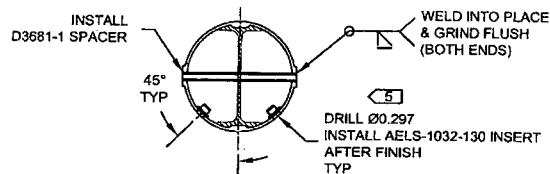
D3391-023 ASSEMBLY DETAIL



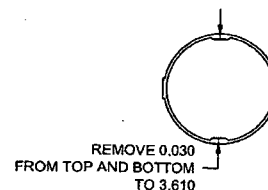
DETAIL K
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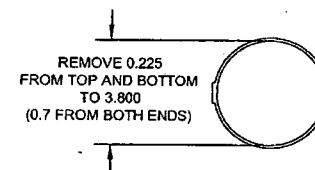
SECTION G-G
SCALE 5X



SECTION H-H
SCALE 5X



SECTION X-X
SCALE 5X



SECTION Y-Y
SCALE 5X

D3391-023 MID TUBE ASSEMBLY PARTS LIST

QTY - 023	PART NUMBER	DESCRIPTION
X	D3391-023	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
5	D3681-1	SPACER
20	AELS-1032-130	INSERT

D3391-023 MID TUBE ASSEMBLY

- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/-291 PER QSI 015
- 3) WELDING: PER DART QSI 004

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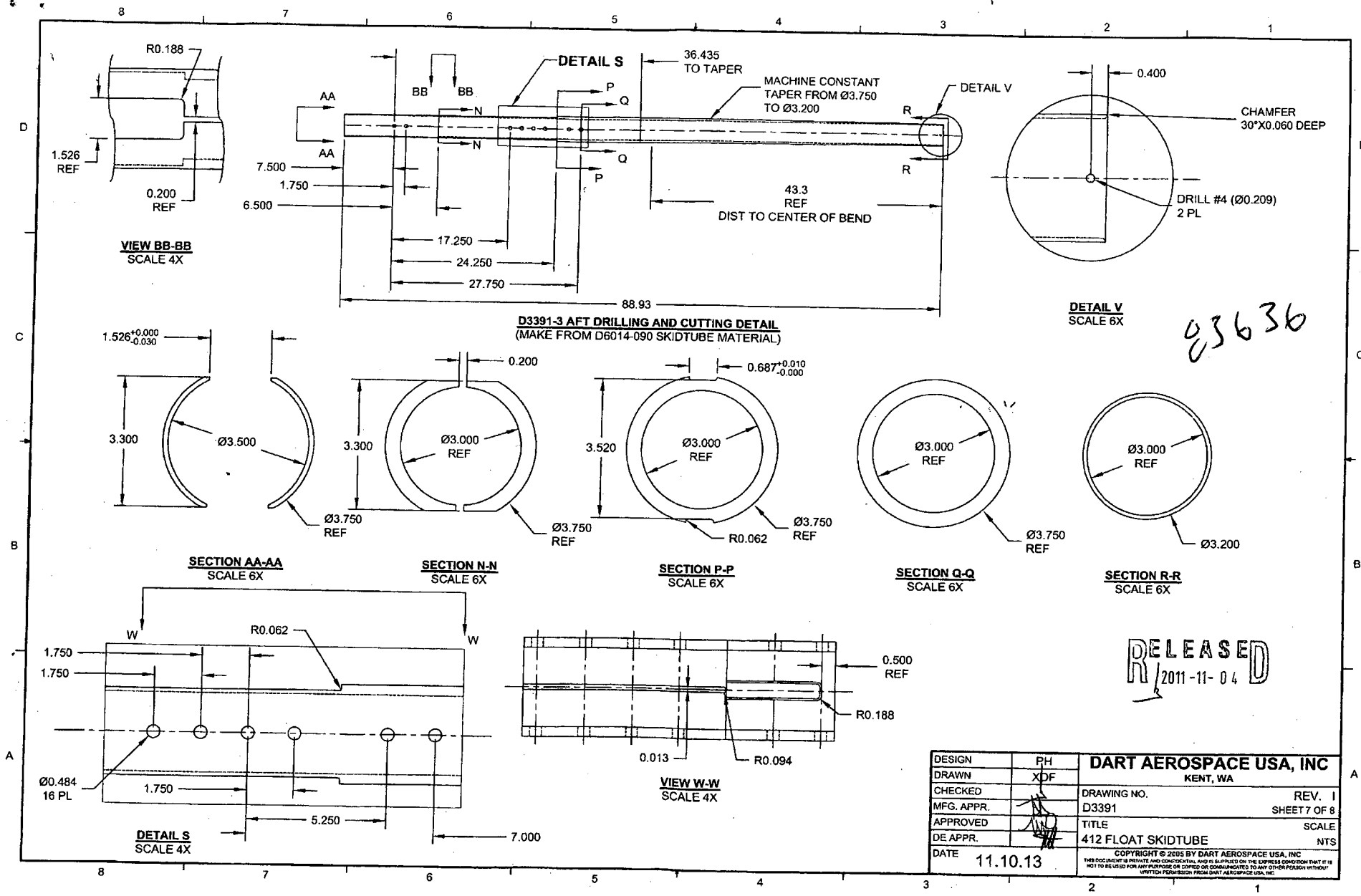
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